

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **2002012958 A**

(43) Date of publication of application: **15.01.02**

(51) Int. Cl

**C23C 2/06**  
**C23C 2/28**  
**C23C 2/40**

(21) Application number: **2000212591**

(22) Date of filing: **13.07.00**

(30) Priority: **15.07.99 JP 11201708**  
**24.04.00 JP 2000122280**

(71) Applicant: **NKK CORP**

(72) Inventor: **TAIRA SHOICHIRO**  
**SUGIMOTO YOSHIHARU**  
**INAGAKI JUNICHI**  
**IMOKAWA TORU**  
**NOMURA SHUJI**  
**SAKURAI MICHITAKA**  
**YAMASHITA MASAOKI**  
**OKUDE SHINYA**  
**SATO KAORU**

**(54) ALLOYED HOT-DIP GALVANIZED STEEL SHEET  
AND ITS MANUFACTURING METHOD**

(57) Abstract:

PROBLEM TO BE SOLVED: To provide an alloyed hot-dip steel sheet superior in a sliding property at press forming, and a method for manufacturing the same.

SOLUTION: The alloyed hot-dip galvanized steel sheet has a flat part on a surface plated with a iron-zinc alloy and an oxide layer of 10 nm or thicker on the surface of a the flat part. In addition, an area factor of the flat part on the surface plated with the iron-zinc alloy is 20-80%, and the plated layer principally consists of  $\delta$ 1 phase and includes  $\zeta$  phase. The method for manufacturing the alloyed hot-dip galvanized steel sheet comprises subjecting a steel sheet to the hot-dip galvanizing, alloying it with a heat treatment, subjecting it to a temper rolling, and forming an oxide layer on the plated surface.

COPYRIGHT: (C)2002,JPO

